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10/671,084	09/25/2003	Norman W. Finn	112025-0539	6323

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EXAMINER	
BLANTON, JOHN D	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/671,084	FINN, NORMAN W.	
	Examiner	Art Unit	
	JOHN BLANTON	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. No mention of "computer readable medium" is present in the original specification or original claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1, 4, 14, 15, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over IEEE Standards for Local and Metropolitan Area Networks: Virtual Bridged Local Area Networks (IEEE Standards for Local and Metropolitan Area Networks: Virtual Bridged Local Area Networks, IEEE std. 802.1Q, 1998) (referenced as 802.1Q below in the office action) in view of IEEE Standard Part 3: Media Access Control (MAC) Bridges, IEEE std. 801.1D, 1998)(referenced as 802.1D below in the office action) and Kasao et al. (US 2003/0195893).

For claims 1, 14, 22, and 23; 802.1Q discloses: an intermediate network device having a plurality of ports for sending and receiving network messages to and from one or more entities of a computer network at least some of which are segregated into a plurality of virtual local area network (VLANs) defined within the computer network (Figure 11-1: ***illustrates the architecture of GVRP in the case of a two-Port Bridge and an end station***)(Section 11.2.1.1: ***VLAN-aware bridges and end devices use the GVRP with sets of VLANs they are members of***), the intermediate network device comprising: a Generic Application Registration Protocol (GARP) VLAN Registration Protocol (GVRP) application component associated with a selected port (Section 11.2: ***The GARP VLAN***

Registration Protocol (GVRP) defines a GARP Application that provides the VLAN registration service), the GVRP application component having: a GARP Information Declaration (GID) component configured to maintain VLAN registration state for the selected port in response to receiving attribute events for the VLANs (Section 11.2.3.1.3: ***GVRP makes use of GARP Information Declaration (GID) and GARP Information Propagation (GIP), which provide the common state machine descriptions and the common information propagation mechanisms defined for use in GARP-based applications. The GARP architecture, GID, and GIP are defined in ISO/IEC 15802-3, Clause 12. GVRP provides a mechanism for dynamic maintenance of the contents of Dynamic VLAN Registration Entries for each VLAN, and for propagating the information they contain to other Bridges. This information allows GVRP-aware devices to dynamically establish and update their knowledge of the set of VLANs that currently have active members, and through which Ports those members can be reached***); a GVRP encoder/decoder unit (Section 11.2.3.1.2-3: ***attributes and values are encoded***); and a GVRP PDU message generator, the attribute events associated with a given set of VLANs (Section 11.2.3.1.2-3: ***Values of instances of the VID Attribute Type shall be encoded as Attribute Values in GARP PDUs***).

802.1Q do not disclose, but 802.1D from same fields of endeavor teach: the GVRP PDU message generator loads the encoded values computed for all of the VLANs defined within the computer network within a single GVRP PDU message for transmission from the selected port (Section 12.11.1.2: ***Figure 12-6 shows the resulting GARP PDU structure with multiple Attributes***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the GARP structure described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to improve inter-operability by using industry established protocols.

802.1Q do not disclose, but Kasao et al. from same fields of endeavor teaches: compact information through an encoded value, in accordance with an encoding algorithm (Paragraph 37, Lines 3-7: ***the hash function and a correspondence table 10-42 for storing the management numbers of the external memory units in one-to-one correspondence relation for all the numerical values of the remainders obtained after dividing the hashing calculation result by the number of divisions***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the hashing techniques as described by Kasao et al. in the GARP VLAN registration described by 802.1Q. The motivation is to reduce network bandwidth consumed by control messages.

For claims 4 and 15, 802.1Q and Kasao et al. disclose the subject matter in claims 1 and 14 as described above in the office action.

802.1Q in combination with Kasao et al. do not disclose, but 802.1D from same fields of endeavor teach: to yield attribute event information for a set of VLANs (Section 12.3.2.2: ***the GID determines the attribute value based on the encoded value contained in the GARP PDU's for each port***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the port description updating method described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to improve inter-operability by using industry established protocols.

6. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over IEEE Standards for Local and Metropolitan Area Networks: Virtual Bridged Local Area Networks (IEEE Standards for Local and Metropolitan Area Networks: Virtual Bridged

Local Area Networks, IEEE std. 802.1Q, 1998) (referenced as 802.1Q below in the office action), IEEE Standard Part 3: Media Access Control (MAC) Bridges, IEEE std. 801.1D, 1998)(referenced as 802.1D below in the office action), and Kasao et al. (US 2003/0195893) as applied to claim 1 above, and further in view of Huang (US 4,281,391).

For claim 2, 802.1Q, 802.1D, and Kasao et al. disclose the subject matter in claim 1 as described above in the office action.

802.1Q, 802.1D, and Kasao et al. do not disclose, but Huang from same fields of endeavor teaches: the encoding algorithm is a number based conversion algorithm (Column 34, Lines 59-64: ***dividing this by the same number to form a new equation is known as Euclid's base conversion algorithm***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement an encoding calculation as described by Huang in the GARP VLAN registration described by 802.1Q. The motivation is to reduce network bandwidth consumed by control messages.

For claim 3, 802.1Q, 802.1D, Kasao et al., and Huang disclose the subject matter in claim 2 as described above in the office action.

Huang discloses using the base conversion algorithm, but does not explicitly disclose using the algorithm with a base of 5. However, the base conversion algorithm is generating a pointer to the entries of the Attribute Event Codes, and there are 5 entries in the table (Refer to Applicant's Figure 6). Therefore, the optimum base value required to point to all entries is 5. Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement an encoding calculation

as described by Huang using a base value of 5. The motivation is to distinctly reference all values in the Attribute table with smallest possible hashing value.

7. Claims 5-8, 10, 16, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over IEEE Standards for Local and Metropolitan Area Networks: Virtual Bridged Local Area Networks (IEEE Standards for Local and Metropolitan Area Networks: Virtual Bridged Local Area Networks, IEEE std. 802.1Q, 1998) (referenced as 802.1Q below in the office action), IEEE Standard Part 3: Media Access Control (MAC) Bridges, IEEE std. 801.1D, 1998)(referenced as 802.1D below in the office action), and Kasao et al. (US 2003/0195893) as applied to claim 1 above, and further in view of Churchyard et al. (US 7,089,302).

For claim 5, 802.1Q, 802.1D, and Kasao et al. disclose the subject matter in claim 1 as described above in the office action.

802.1Q, 802.1D, and Kasao et al. do not disclose, but Churchyard et al. from same fields of endeavor teach: generate and send a GVRP PDU containing a just_kidding message (Column 4, Lines 65-67: ***nodes not capable of decoding the message will read the header field and not recognize the field entry; this will cause the message to be ignored; this is the intent of the just kidding message, so nodes that don't understand the compact GVRP format will not get corrupted***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement a non-standard field value as described by Churchyard et al. in the GARP VLAN registration described by 802.1Q. The motivation is to prevent node configuration lock-ups.

For claims 6 and 16, 802.1Q, 802.1D, Kasao et al., and Churchyard et al. disclose the subject matter in claims 5 and 14 as described above in the office action.

802.1Q do not disclose, but 802.1D from same fields of endeavor teach: a leave timer (Section 12.7.4: ***each registrar per attribute comprises a leave timer***); state machines associated with each GID (Section 12.3.2: ***each instance of GID consists of a set of state machines for each attribute value associated with the GARP***); state machine starts the leave timer (Section 12.7.4: ***the registrar starts the leave timer***) while the leave all timer is restarted (Section 12.7.6: ***when the another participant receives a leave all message the participant generates a restart timer message***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement GARP protocol as described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to prevent node configuration lock-ups.

802.1D does not disclose the additional message "just kidding" which causes non-compliant nodes to ignore the compact GVRP message disclosed in claim 1, but Churchyard et al. does disclose using an additional field that non-compliant nodes would ignore which reads on a "just kidding" message. Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement state machines and timers as described by 802.1D as applied to the additional "just kidding" message described by Churchyard et al. The motivation is to use the 802.1D standard to any variable or state machines added to the existing protocol.

For claims 7 and 17, 802.1Q, Kasao et al., 802.1D, and Churchyard et al. disclose the subject matter in claims 6 and 16 as described above in the office action.

802.1Q in combination with Kasao et al. do not disclose, but 802.1D from same fields of endeavor teach: a leave_all timer; and a leave_all state machine, wherein upon expiration of the leave_all timer the leave_all state machine enters an active state (Section 12.7.6: ***leave all messages are generated by the leave all state machine***) and the compact-GVRP application component generates and sends a GVRP PDU message that is configured to cause network entities that receive it to respond with one or more GVRP PDU messages (Section 12.7.6: ***when the leave all timer expires, a leave all message is generated; this requires all applicants to respond with a rejoin***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement GARP protocol as described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to prevent node configuration lock-ups.

For claim 8, 802.1Q, Kasao et al., 802.1D, and Churchyard et al. disclose the subject matter in claim 7 as described above in the office action.

802.1Q in combination with Kasao et al. do not disclose, but 802.1D from same fields of endeavor teach: the leave timer (Section 12.7.4: ***each registrar per attribute comprises a leave timer***); leave_all timer (Section 12.7.6: ***when the leave all timer expires, a leave all message is generated; this requires all applicants to respond with a rejoin***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to assign timer preset values so the participant will not time out when responding to a leave all message with a join message as described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to prevent node configuration lock-ups.

For claims 10 and 19, 802.1Q, Kasao et al., 802.1D, and Churchyard et al. disclose the subject matter in claims 7 and 14 as described above in the office action.

802.1Q in combination with Kasao et al. do not disclose, but 802.1D from same fields of endeavor teach: a port partner variable configured to hold a source identifier (Section 12.2: ***The set of registrations of a given Attribute value within the Bridged LAN can therefore be considered to form a set of subtrees)***, wherein upon processing a received GVRP message containing a negotiation message with a source identifier the compact GVRP application component places the source identifier in the port partner variable (Section 12.2: ***each indicating, from a given GARP Participant, the subset of the active topology in which all GARP Participants that have declared that Attribute value can be found. In Figure 12-3, Ports that form this set of subtrees are shown as the origin of the arrows, based on the registrations that are shown in Figure 12-2.***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement GARP protocol as described by 802.1D in the GARP VLAN registration described by 802.1Q. The motivation is to use standard protocols for registering of attributes.

8. Claims 9, 11, 12, 18, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over IEEE Standards for Local and Metropolitan Area Networks: Virtual Bridged Local Area Networks (IEEE Standards for Local and Metropolitan Area Networks: Virtual Bridged Local Area Networks, IEEE std. 802.1Q, 1998) (referenced as 802.1Q below in the office action), Kasao et al. (US 2003/0195893), Churchyard et al. (US 7,089,302), and IEEE Standard Part 3: Media Access Control (MAC) Bridges,

IEEE std. 801.1D, 1998)(referenced as 802.1D below in the office action) as applied to claims 7 and 14 above, and further in view of Liu (US 2004/0061773).

For claims 9 and 18, 802.1Q, Kasao et al., 802.1D, and Churchyard et al. disclose the subject matter in claims 7 and 16 as described above in the office action.

802.1Q in combination with Kasao et al. do not disclose, but Liu from same fields of endeavor teaches: a dual mode operation and the automatic transfer from one mode to another based on the received signal (Paragraph 38: ***the two modes, digital and analog, read on the slow and fast modes; further the device has a function to automatically switch between the modes, this reads on the mode select unit switching from compact to normal GVRP modes***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the dual mode switching method as described by Liu in the GARP VLAN registration described by 802.1Q. The motivation is to efficiently process all messages.

For claims 11 and 20, 802.1Q, Kasao et al., 802.1D, and Churchyard et al. disclose the subject matter in claims 10 and 19 as described above in the office action.

802.1Q in combination with Kasao et al. do not disclose, but Liu from same fields of endeavor teaches: a received GVRP message containing a negotiation message with a source identifier that does not match the content of the port partner variable (Paragraph 38: ***a signal received that is not compatible with the current mode of reception will initiate an automatic switch to the other mode***), the compact GVRP application enters the slow compact mode (Paragraph 38: ***the mode switch to reads on going to the slow mode which can be interpreted as the mode to handle standard GVRP messages***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to use

the dual mode switching method as described by Liu in the GARP VLAN registration described by 802.1Q. The motivation is to efficiently process all messages.

For claims 12 and 21, 802.1Q, Kasao et al., 802.1D, and Churchyard et al. disclose the subject matter in claims 10 and 19 as described above in the office action.

802.1Q in combination with Kasao et al. do not disclose, but Liu from same fields of endeavor teaches: processing a received GVRP message containing a negotiation message with a source identifier that matches the content of the port partner variable (Paragraph 38: ***a signal received that is not compatible with the current mode of reception will initiate an automatic switch to the other mode***), the compact GVRP application enters the fast compact mode (Paragraph 38: ***the mode switch to reads on going to the fast mode which can be interpreted as the mode to handle compact GVRP messages***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the dual mode switching method as described by Liu in the GARP VLAN registration described by 802.1Q. The motivation is to efficiently process all messages.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over IEEE Standards for Local and Metropolitan Area Networks: Virtual Bridged Local Area Networks (IEEE Standards for Local and Metropolitan Area Networks: Virtual Bridged Local Area Networks, IEEE std. 802.1Q, 1998) (referenced as 802.1Q below in the office action), IEEE Standard Part 3: Media Access Control (MAC) Bridges, IEEE std. 801.1D, 1998)(referenced as 802.1D below in the office action), and Kasao et al. (US

2003/0195893) as applied to claim 1 above, and further in view of Davis et al. (US 2003/0043806) and Gharachorloo et al. (US 2002/0087806).

For claim 13, 802.1Q, 802.1D, and Kasao et al. disclose the subject matter in claim 1 as described above in the office action.

802.1Q, 802.1D, and Kasao et al. do not disclose, but Davis et al. from same fields of endeavor teaches: generate a mixed format PDU message (Paragraph 35, Lines 1-6: ***multiple IP packets are placed in the same PDU and the recipient is able to distinguish the different packets***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the multi segment PDU as described by Davis et al. in the GARP VLAN registration described by 802.1Q. The motivation is to reduce network bandwidth consumed by control messages.

802.1Q in combination with Kasao et al. do not disclose, but Gharachorloo et al. from same fields of endeavor teaches: a vector message (Paragraph 195, Lines 15-19: ***a data directory structure using a coarse vector format***). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the vector pointer structure as described by Gharachorloo et al. in the GARP VLAN registration described by 802.1Q. The motivation is to reduce network bandwidth consumed by control messages.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN BLANTON whose telephone number is (571)270-

3933. The examiner can normally be reached on Monday through Friday 7:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Ryman can be reached on (571) 272-3152. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. B./
Examiner, Art Unit 2419

/Daniel J. Ryman/
Supervisory Patent Examiner, Art Unit 2419